AN ANALYSIS OF CROP-VALUATION SYSTEM OF INDIAN AGRICULTURE SECTOR- A STUDY OF SPECIFIED AGRICULTURE CROPS WITH SPECIAL REFERENCE TO SELECTED DISTRICT OF WESTERN UP

A

Synopsis

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INTRODUCTION

Since independence, India has made substantial progress in agriculture. Around 60 per cent of India's land area is arable which makes it the second largest country in terms of total arable land in the world after the United States (The World Bank, 2017). Agriculture plays a vital role in India's economy. 54.6% of the population is engaged in agriculture and allied activities (census 2011). There are more than 700,000 villages in the country which are engaged in by agriculture base activities. Major share of the national income of the country is contributed by agriculture. The development of technology in agriculture has made India self-sufficient in food, grain and major producer of many agricultural crops in the world. Today, India is the largest producer of fruits, cashew, coconut, tea and milk in the world, the second largest producer of wheat, vegetables, sugar and fish and the third largest producer of rice and tobacco. Prominent among the Green Revolution crops, yellow revolution in oilseeds, white revolution in milk production, revolution in blue fish production and Golden Revolution in horticulture contributed towards the current achievement in the sub-sectors. However, production growth in many crops has declined over the past few years. India has witnessed impressive agricultural growth since independence due to the resilience of its farmers.

In developing countries, agriculture is one of the most important government instruments to promote economic growth and reduce poverty in rural areas. Agriculture development in India has been viewed by and large in the context of increasing the output rather than welfare of the farmers. In the recent past, the sector has been facing regular distress and crisis posing a severe threat to peasants in practicing agriculture as a main source of livelihood. Under this perspective, the Government of India in 2016 announced to double the farmers income (DFI) by 2022 by shifting the focus from agricultural output and food security to income security. In spite of all these, productivity in the agricultural sector has not been increase as growth witnessed in other sector of economy. In spite of the fact that agriculture plays the most significant role in our economy, no comprehensive, detailed and systematic accounting methods, and costing system and management techniques has been developed for this industry. If we want to strengthen our economy eventually we need to focus on making this occupation more profitable so that we can achieve our goal of economic development. Even after seven decades of Independence Agriculture continues to be the strong base of the socio-

economic structure of the country. In addition its contribution of a measurable part of the economy and financial security to the two-third population of the country, it plays a vital role in providing stability to economic condition of supply and demand of agricultural commodities. This concern of balancing the supply and demand in itself is as difficult as the diversified and vibrant domain of agricultural crop production.

Positioning of Agriculture in Uttar Pradesh

Uttar Pradesh is located in the northern region of India and shares its border with Nepal. The state borders with various states, those states are as follows - Rajasthan, Haryana, Delhi, Uttarakhand, Bihar and Madhya Pradesh. The total geographical area of Uttar Pradesh is 29.44 million hectare and the area under forest 1657023 hectare. The cultivation area is 24170403 hectare (82.1% of total geographical area) and the net area sown is 16573478 hectare (68.5% of cultivable area). Uttar Pradesh population is 19112371 and more than half of the population of Uttar Pradesh lives in the rural area. Uttar Pradesh has a total of 75 districts, 14 divisions, 822 blocks, 52021 Panchayat and 107452 villages.

Uttar Pradesh has a major share in the agricultural sector of India; Uttar Pradesh has a large share in the production of food grains. Agriculture is the main source of livelihood here; More than 70 percent of the population here directly or indirectly depends on agriculture and allied sectors.

- The average holding size of agriculture in Uttar Pradesh is 0.8 hectares which is less than the national average of 1.15 hectares
- Wheat is produced mainly in these districts of the state; Meerut, Bulandshahr, Saharanpur, Agra Aligarh, Muzaffarnagar, Moradabad, Etawah, Kanpur, Farrukhabad and Fatehpur.
- The major Rice producing districts of the state are as follows; Pilibhit, Saharanpur, Maharajganj, Deoria, Gonda, Bahraich, Basti, RaeBareli, Ballia, Lucknow, Varanasi and.
- The most important cash crop of state is sugarcane. Sugarcane of Meerut & Muzaffarnagar district is considered to be the best.

Table 1 – **Districtwise Crops And Area Covered**

District	Area covered (in sq.km.)	Main crops
Meerut	2590	Wheat, Rice, Sugarcane etc.
Muzaffarnagar	2991	Sugarcane, Wheat, rice etc.
Moradabad	10863	Rice, Wheat, Sugarcane, Maize,Toria etc.
Bulandshahr	4353	Wheat, Rice, Sugarcane, Maize, Pulse, Mustard etc.
Bijnor	4049	Sugarcane, Rice, Wheat, pulse etc.

Selected crops production(in Million Tonnes) on the behalf of Agriculture statistics at a glance 2018-19 –:

1. **Wheat**

   India - 112.91

   - Uttar Pradesh - 31.88
   - Punjab - 17.85
   - Madhya Pradesh - 15.91

2. **Sugarcane**

   India – 376.90

   - Uttar Pradesh – 177.06
   - Maharashtra – 83.13
   - Karnataka – 28.26

3. **Rice**

   India – 112.91

   - West Bengal – 14.97
   - Punjab - 13.38
   - Uttar Pradesh – 13.27

Costing for Agriculture

There are five characteristics of external elements associated with accounting in agriculture:

1. Their cost is often neglected.
2. They often occur after a time interval.

3. They often harm groups whose interests are not represented.
4. The identity of the manufacturer is not always known.
5. Their result is sub-optimal economic and policy solutions.

In cost accounting, production lines of a product may have different costs and profit or loss. On the other hand, provide information to guide management for proper planning, operation, control and profitability studies and decision making. Cost Accounting is considered to be an effective tool for cost detection and management control. The purpose of cost accounting in agriculture is very clear, through this, it contributes significantly to the calculation of cost, reduction of cost and easily help for decision making in agricultural.

Purpose of Cost Accounting-:

- To ascertain the cost of agriculture crops.
- To Determining the sell price of agriculture crops.
- To control the cost of production in agriculture line

REVIEW OF LITERATURE

Review of literature is very important for researchers. It is a comprehensive summary of previous research work, helping researchers and other authors in research determine the nature of research. These research works are related to research in the last few years.

Table 2 - International Reviews

S No.	Year & Journal	Author(s)	Title	Objective	Findings
1.	2019 (Journal of accounting & Organizational change)	Sinclear R. Ndemewah, Kevin Menges, Martin R.W. Hiebl	Management accounting research on farms: what is known and what needs knowing?	The purpose of this paper is to provide an overview of the available research, develop an explanatory framework for Management Accounting practices in farming entities and identify some major avenues for future research on the topic.	The findings reveal that the practice of Management accounting in farms is subject to information problems and that the empirical research on this topic largely lacks a theoretical explanation. Therefore, the explanatory framework of Management accounting practices in farming entities

					reveals that these practices are subject to influencing factors such as government farm policies, market competition, technological changes, the seasons and the weather/climate.
2.	2019 (International Journal of Innovative Studies in Sociology and Humanities)	Dr.Jai Kumar Sharma, Mr. Pawan Kumar Dubey	A Need of Farm Records and Accounting in Agriculture Sector.	This paper aims at analysing the activities of the farmer on the farm of any type practiced in both physical and monetary terms.	This study shows that the purpose of this article is to analyze the activities of the farmer on any type of farm practiced in both physical and monetary terms. Accounts should be classified to ascertain the cost of each crop to compare the productivity, profitability of different crops, and to measure the effectiveness of allied activities. Lack of proper agricultural management and accounting system are the main reasons for low productivity. People are still demanding that agriculture should be considered as an industry in India.
3.	2018 (International Journal of Law and Management)	Andrain Hadiyanto, Evita Puspitasari ,Erlane K Ghani	The effect of accounting methods on financial reporting quality	The effect of accounting methods on financial reporting quality.	This study shows that companies using historical cost measurement produce less reliable and less relevant information compared to the companies that are using fair value measurement.
4.	2015 (Sustainability Accounting, Management and	Sue Ogilvy	Developing the ecological balance sheet for agricultural sustainability	The purpose of this paper is to suggest a practical means of incorporating ecological capital into the framework of business entities.	The EBS is possible, practical and useful. A form of double-entry bookkeeping can be developed to allow accrual accounting principles to be

	Policy Journal)			Investors and shareholders need to be informed of the viability and sustainability of their investments. Ecological (natural) capital risks are becoming more significant. Exposure to material risk from primary industry is a significant factor for primary processing, pharmaceutical, textile and the financial industry.	applied to these assets. By using an EBS, an entity can improve its capability to increase inflows and avoid future outflows of economic benefit.
5.	2011 (SSRN Electronic Journal)	Yohanes Handoko Aryanto	Theoretical Failure of IAS 41	The aim was to analyze the theoretical aspects of IAS 41: Agriculture.	Rejection on IAS 41 is appearing as it causes volatility of income and misleading on taxation-related decisions. Also, other research states that IAS 41 has failed in achieving its objectives, which is to increase financial statement comparability in agricultural sector
6.	2010 (Petroleum-Gas University of Ploiesti)	Ilie BăviŃă, Mădălina Dumitru, Ileana Cosmina Pitulice, Mirela Elena Nichita	Cost Computation for the Agricultural Products within the Vegetal Farms	The objective of this study is to analyze the characteristics of cost computation on agricultural products farms and it appeals to the professional judgment for developing a case study designed to model the process by numerical data	Establishing the unit cost of agricultural products is performed through several methods differentiated according to the particularities of the harvested products.

Table 3 - National Reviews

S No.	Year	Author(s)	Title	Objective	Findings
1.	2019 (International Journal of	Dr. Jai Kumar Sharma, Mr.Pawan	A Need of Farm Records and Accounting in	This article aims at analysing the activities of the farmer on the farm	The farm accounting system should be divided into sections based on production

	Innovative Studies in Sociology and Humanities)	Kumar Dubey	Agriculture Sector	of any type practiced in both physical and monetary terms.	units, such as various crops, live-stock and other expense categories based on location. Since most farms are still basically family- owned, with book-keeping done by a member of the family, the specific records should normally be those which will provide, with a minimum effort, all the information the farmer must have.
2.	2017 (Agriculture Economics Research Review)	S.K. Srivastava, Ramesh Chand and Jaspal Singh	Changing Crop Production Cost in India: Input Prices, Substitution and Technological Effects	The focus of the study is to examine crop economics at aggregate level, identified sources of cost escalation, and evaluated the effects of factor prices, substitution, and technological impacts on cost of production over past 25 years.	The cost elasticity of yield has indicated an inverse link between yield and production costs in all crops. The aggregate cultivation costs of the selected crops increased at a faster rate over the 25-year period since 1990-91 than the increase in output during 1990-91 to 2014-15. The information revealed the current level of farm mechanization is insufficient to offset Indian agriculture's wage-push cost inflation.
3.	2017 (Agriculture Update)	A. Samarpitha , N. Vasudev and K. Suhasini	Economics of profitable rice cultivation: a study across farm sizes in Kurnool district of Andhra Pradesh	The aim of the study is to investigate the cost of cultivation and profitability of rice particularly across different farm sizes in in Kurnool district of Andhra Pradesh	The results revealed that there is an increase in the cost of rice cultivation with increases in farm area. Human labor was the main component of the total cultivation cost which confirms the labour-intensive nature of paddy cultivation. In rice cultivation marginal farms have been found to be more profitable than large farms. Large farms can therefore emulate the practices followed by marginal farms with a

					view to improving profitability.
4.	2017 (Indian Journal of Economics and Developme nt)	Jatinder Sachdeva, Parminder Kaur and Sumit Bhardwaj	Profitability Analysis of Major Crops in Punjab: Some Evidence from Cost of Cultivation Survey Data	To examine the cropping pattern , irrigation pattern and crop-wise fertilizer consumption pattern and to analyse the crop-wise groundwater extraction and usage in Punjab, and to estimate the profitability of different crops using market prices, economic prices and natural resource valuation technologies	The fast shift in the area from traditional diversified crops to mono-culture of rice wheat system was driven by forces such as price policy, technological change, market infrastructure and low cost of irrigation. The results also brought out those alternative crops gave lower returns as compared with paddy. The present set of marketing infrastructure and agricultural technological know-how, the rice-wheat cropping pattern is likely to produce the highest and more stable income.

NEED OF STUDY

Despite the importance of agriculture in India's economy, agriculture has not received as much attention as was needed by accounting researchers, practitioners, and standard residents. Various steps have been taken by the government to improve the state of agriculture, but those steps were not related to its accounting, the issues such as lack of knowledge in the absence of awareness about costing and other accounting factor due to farmers has to face many problems. As an example, until the arrival of IND AS41, there was no standard anywhere for biological assets, whose valuation is difficult and controversial. Farmers usually prepare accounts in order to comply with tax framework and subsidies. On the other hand, it is generally believed that accounting can improve Agriculture profitability and lead to better performance funding sources (other than subsidies) also are more easily achieved.

OBJECTIVE OF THE STUDY

1. To study about the theoretical framework of cost accounting structure to measure and analyze the Cost, return and value of the Indian agricultural sector.

2. To estimate and analyze the cultivation cost structure of selected crops (Wheat, Rice, Sugarcane) for different sizes of farmers (Cultivators).
3. To examine the trend in Cost, Return and Yield of selected agriculture crops (Per Hectare and per Quintal).
4. To analyze the impact of cost, return and value on the cultivation pattern of selected agriculture crops.
5. To analyze the impact of the minimum support price (MSP) declared by the Commission of Agricultural Costs and Prices (CACP) on the total cost of production of selected agricultural crops.

HYPOTHESIS OF THE STUDY

H_0= There is no significant relationship between cost, return and yield of selected crops.

H_{01}=There is no significant impact of Minimum Support Price on total cost of production of selected agricultural crops.

RESEARCH METHODOLOGY

In order to achieve the above objectives, the following research methodology will be adopted:

Duration of study: - For the purpose of analysis the data divided into two parts -:

- For achieving the second objective time period taken on behalf of crop cultivation.
- And for other objectives period taken from financial year to 2015 to 2020 will be taken into consideration.

Area of Study: - The study will consider **Meerut, Muzaffarnagar, Moradabad, Bulandshahr, Bijnor** districts of Uttar Pradesh. Agriculture is main source of employment in these districts. The major crops grown in these regions are Rice, sugarcane, grain, maize, and potato. **Sugarcane, Wheat and Rice** have been selected due to relatively high production.

Population: The population for the study will be the Farmers from five major Districts of Uttar Pradesh i.e. Meerut, Muzaffarnagar, Moradabad, Bulandshahr, Bijnor.

Sample Size: The sample size for the study will be the 500 farmers from five major Districts of Uttar Pradesh i.e. Meerut, Muzaffarnagar, Moradabad, Bulandshahr, Bijnor and the selected crops i.e. Wheat, Rice, Sugarcane.

Criteria for selection of farmers:-

Small-scale Farmers – Cultivation land is use less than or equal to 1.21406 hectares (3 acre).

Medium-Scale Farmers – Cultivation land uses more than 1.21406 hectares or less than 2.42811 hectares (6 acre).

Large-scale Farmers – Cultivation land is used more than 2.42811 hectares (6 acre)

Table 4 – List of No. of Farmers Selected From Each District

District	Sample Size
Meerut	Small-scale farmers – 50 Medium-scale farmers- 25 Large- scale farmers – 25
Muzaffarnagar	Small-scale farmers – 50 Medium-scale farmers- 25 Large- scale farmers – 25
Moradabad	Small-scale farmers – 50 Medium-scale farmers- 25 Large- scale farmers – 25
Bulandshahr	Small-scale farmers – 50 Medium-scale farmers- 25 Large- scale farmers – 25
Bijnor	Small-scale farmers – 50 Medium-scale farmers- 25 Large- scale farmers – 25

Sampling Techniques: Convenience sampling and Multi-stage sampling technique will be used to collect data from the respondent.

Sources of data: This study will be based on primary data, as well as secondary data to attain its stated objectives.

- **Primary Data**: A schedule will be framed for the collection of data from selected respondents.
- **Secondary Data**: Secondary data will be taken from a government publication, government, agriculture sites and agriculture citation etc.

DATA ANALYSIS

1. Presentation Tools: Graphs, tables and charts will be used to present the data.
2. Analytical Tools: Correlation, Trend analysis or other required test will be used as per the nature of data.

Table 5 - Objective Wise Research Methodology

S.No.	Objective	Research Methodology
1.	To study about the theoretical framework of cost accounting structure for the measure and analyze the Cost, return and value in the Indian agricultural sector and the cultivation pattern of selected agriculture crops.	In order to completion of this objective the report or guidelines published for costing terms related to agriculture issued by the Directorate Economic and Statistics and CAPC or other issued useful theoretical concept.
2.	To estimate and analyze the cultivation cost structure of selected crops (Wheat, Rice, Sugarcane) for different sizes of farmers (Cultivators).	For completing this objective – cultivators are divided into 3 parts on the basis of cultivation land size such as small farmers, medium farmers and large farmers.
3.	To examine the trend in Cost, Return and Yield of selected crops (Per Hectare and per Quintal).	For achieving this objective researcher go through the annual reports issued by the government authorities related to crops in selected districts. Trend analysis will be applied
4.	To analyze the impact of cost, return and value on the cultivation pattern of selected agriculture crops.	To achieve this objective correlation will be applied.
5.	To analyze the impact of the minimum support price (MSP) declared by the Commission of Agricultural Costs and Prices (CACP) on the total cost of production of selected agricultural commodities.	To achieve this objective, collected the information related to how to decided Minimum Support Price by government' and to know the impact tools like correlation and regression will be applied.

CHAPTER PLAN

Chapter-1 Introduction

- Agriculture- An Overview
- Importance of Agriculture costing
- Profile of Selected area and Selected Agriculture crops

Chapter-2 Review of Literature

Chapter-3 Research Methodolodgy

Chapter-4 The Cultivation process and costing of Selected Agriculture crops in study area

Chapter-5 Anlysis of the trend and Impact on Selected Agriculure crops

- Trend in Cost, Return and Yield
- Impacts on Crops Cultivation Patterns

Chapter-6 Analysis of Impact of Minimum Support Prices

Chapter-7 Finding, Suggestion and Conclusion

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